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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,903	06/23/2003	Parvis Hassan-Zade	P/3239-16	7540
2352	7590	01/13/2005	EXAMINER PARK, JOHN J	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			ART UNIT 2876	PAPER NUMBER

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/601,903

Applicant(s)

HASSAN-ZADE ET AL.

Examiner

John J. Park

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-16, and 18- 22 is/are rejected.
- 7) ☒ Claim(s) 12 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date herewith.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

Claim Objections

2. Claim 20 is objected to because of the following informalities:

There is a spelling error in the word "elecromagnetic" in line 3 of claim 20. The word should be corrected by "electromagnetic. Appropriate correction is required.

3. Regarding claims 1, 2, 5-7, 10, 15, 18, and 20-22, the phrases "such that", "such as", and "such a way" render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by Vega et al. (U.S. patent No. 6,218,942).

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Re claim 1, apparatus for identifying a plurality of items each of which has a radio frequency transponder (Fig.1; Col.3 Line12-24), which apparatus comprises:

a conveyor for conveying the items (Fig.1; Col.3 Line25-31);

a three dimensional radio frequency antenna positioned on one side of the conveyor, the conveyor having a movable part for moving the items into and out of the antenna (Col.3 Line48-57) such that the items when in the conveyor are completely surrounded by the antenna (Fig.2; Fig.3); and

a reader for sending interrogation signals to the transponders via the antenna and for reading identification information from the transponders (Col.3 Line58-63; Col.4 Line28-43).

6. Claim 13 is rejected under 35 U.S.C. 102(b) as anticipated by Brady et al. (U.S. patent No. 6,201,474).

Re claim 13, a radio frequency transponder comprises (Col.2 Line41-45):

a housing (Col.3 Line15-25);

a substrate within the housing (Col.5 Line66-Col.6 Line12);

a printed circuit board mounted on the substrate (Col.6 Line1-9);

a coil mounted on the substrate such as to be spaced therefrom (Col.6 Line23-27); and

an encapsulant encapsulating the substrate, the printed circuit board, the integrated circuit chip and the coil, the spacing of the coil from the substrate enabling the encapsulate to completely surround the coil (Col.6 Line1-16).

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7. Claim 15 is rejected under 35 U.S.C. 102(b) as anticipated by Geiszler et al. (U.S. patent No. 5,565,846).

Re claim 15, a three dimensional radio frequency antenna comprising(Col.2 Line10-58):
a plurality of cylindrical antenna coils arranged within one another in a nested relationship, some of the coils being wound such that horizontal magnetic fields phase shift at 180° and 90° may be generated, and others of the coils being wound such that vertical magnetic fields with phase shifts of 180° may be developed (Col.5 Line5-24);

the plurality of cylindrical antenna coils being further arranged such that a three dimensional reading area is developed and noise compensation areas are developed at opposite ends of the reading area (Col.3 Line18-24; Col.5 Line15-43).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2-4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vega et al. (U.S. patent No. 6,218,942) in view of Brady et al. (U.S. patent No. 6,201,474).

Re claim 2, Vega et al. disclose a RFID tag exciter or reader (Fig.1), which includes an exciter antenna and a reader antenna, arranged for operation in association with an article or package transport conveyor (Col.3 Line25-31). A base station provides an excitation signal,

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receives a read signal, and communicates with a system element (Col.3 Line48-57). A hand held RFID tag exciter or reader includes a hand holdable housing including an exciter and a reader antenna (Fig.2; Fig 3)

However, Vega et al. fail to teach that a plurality of coils mounted in a three dimensional arrangement.

Brady et al. disclose coil antenna configuration may be formed in a housing preassembling and positioning a RFID transponder. (Col.5 Line66-Col.6 Line27)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ coil antenna configuration formed in a RFID transponder housing as taught by Brady et al. into the teachings of Vega et al. in order to wind the coil antenna around the RFID transponder housing on an article or package transport conveyor that it would be more flexible to apply and increase communication ability.

Re claim 3, the teachings of Vega et al. have been discussed above.

However, Vega et al. fail to teach that coils defining the reading field are interrogated sequentially.

Brady et al. disclose that a signal processing section comprises control and processing circuitry and memory. A read-only memory (ROM) is conjunct with a processing circuitry providing functions such as response delay timing, data flow control and power supply switching. (Col.5 Line8-32)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the signal process providing response delay timing, data flow control, and power supply switching as taught by Brady et al. into the teachings of Vega et al. in

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order to provide the circuitry and memory as a signal processing system on the transport device for recording, controlling, and maintaining the inventory items.

Re claim 4, the teachings of Vega et al. have been discussed above.

However, Vega et al. fail to teach a quiet mode to prevent that same transponder from responding to interrogation signals from the antenna.

Brady et al. disclose that non-volatile programmable memory is used to store transponder data so the data is retained when the transponder is in a quiescent or power-saving 'sleep' state. (Col.5 Line33-40)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the non-volatile programmable memory to store transponder data for quiescent state as taught by Brady et al. into the teachings of Vega et al. in order to apply the non-volatile programmable memory into a data buffer of RFID IC to provide to temporarily hold incoming data as an interface with an antenna for avoiding duplicate works and managing items in order.

Re claim 8, the teachings of Vega et al. have been discussed above.

However, Vega et al. fail to teach that the RF transponder comprises a circuit board and a coil mounted on the substrate and encapsulation on them.

Brady et al. disclose that a RFID IC is mounted to a substrate and bonded to the coil antenna. (Col.6 Line1-4) The RFID IC and antenna leads are encapsulated. (Col.6 Line4-15)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the RFID IC mounted to a substrate and coil antenna with an encapsulant as taught by Brady et al. into the teachings of Vega et al. in order to apply

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interconnection between the RFID IC and coil antenna with encapsulation for better communication and security.

10. Claims 5-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vega et al. (U.S. patent No. 6,218,942) in view of Brady et al. (U.S. patent No. 6,201,474) as applied to claim 2 above, and further in view of Geiszler et al. (U.S. patent No. 5,565,846).

Re claim 5, the teachings of Vega et al. in view of Brady et al. have been discussed above.

However, Vega et al. in view of Brady et al. fail to teach a 180° phase shift coil antenna between magnetic fields to reduce undesired electromagnetic noise from affecting the reading field.

Geiszler et al. disclose coils wound and connected that they are 180° out of phase to couple out other interfering signals. (Col.3 Line18-25; Col.5 Line15-45)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ wound and connected coils which are able to turning to 180° as taught by Geiszler et al. into the teachings of Vega et al. in view of Brady et al. in order to apply the flexible coil antenna to various magnetic fields that would cancel unwanted interfering signals for effective connection.

Re claims 6 and 7, the teachings of Vega et al. in view of Brady et al. have been discussed above.

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However, Vega et al. in view of Brady et al. fail to teach that the antenna has at least two coils with magnetic fields having 180° phase shift to minimize electromagnetic radiation and to limit of the reading area.

Geiszler et al. disclose the two receiver coils are connected electrically in parallel and are wound or connected so that they are 180° out of phase that the connection cancels out interference and unwanted signals from outside read range. (Col.5 Line15-45)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the two receiver coils with 180° out of phase as taught by Geiszler et al. into the teachings of Vega et al. in view of Brady et al. in order to connect the two receiver coils in parallel and in phase opposition for effective cancels for interference and many other unwanted signals from out of the area.

Re claim 9, the teachings of Vega et al. in view of Brady et al. have been discussed above.

However, Vega et al. in view of Brady et al. fail to teach the coil spaced from the substrate by a plurality of spacer elements extending between the substrate and the coil.

Geiszler et al. disclose the coil wound with approximately one quarter inch spacing between the windings of a secondary winding. (Col.5 Line47-67)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the spaced winding coils as taught by Geiszler et al. into the teachings of Vega et al. in view of Brady et al. in order to wind the coils with space between adjacent coils for preventing coils from interference among them.

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11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vega et al. (U.S. patent No. 6,218,942) in view of Geiszler et al. (U.S. patent No. 5,565,846).

Re claim 10, the teachings of Vega et al. have been discussed above.

However, Vega et al. fail to teach a plurality of cylindrical antenna coils arranged within one another in a nested relationship and developed noise noncompensation area at opposite ends of the reading area.

Geiszler et al. discloses that a receiver coil is disposed along the axis of the exciter coil at an opposite end of the exciter coil from the first receiver coil and is arranged substantially perpendicular to the exciter coil, and the two receiver coils are connected in parallel and in phase opposition. (Col.2 Line47-58) The indicated connection cancels out exciter interference and other unwanted signals. (Col.5 Line6-45)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the receiver coil disposed along the axis of the exciter coil as taught by Geiszler et al. into the teachings of Vega et al. in order to apply the exciter coil wound by the receiver coil to the transponder device that it would connect in parallel and in phase opposition, and cancel out all exciter interference and other unwanted signals.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vega et al. (U.S. patent No. 6,218,942) in view of Geiszler et al. (U.S. patent No. 5,565,846) as applied to claim 10 above, and further in view of Yamada et al. (U.S. patent No. 4,594,550).

Re claim 11, the teachings of Vega et al. in view of Geiszler et al. have been discussed above.

However, Vega et al. in view of Geiszler et al. fail to teach that each coil has turns with unequal spacing, so that the magnetic field developed by the coil is homogeneous.

Yamada et al. disclose a nuclear magnetic resonance (NMR) imaging of internal information of a target placed in a homogeneous static magnetic field produced by a group of differential scanner coils. (Fig.2; Col.3 Line20-60; Col.8 Line25-36)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ a homogeneous static magnetic field produced by a group of scanner coils as taught by Vega et al. in view of Geiszler et al. in order to apply a plurality of scanner coils into a magnetic field in a transponder antenna for providing constant component scanning.

13. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brady et al. (U.S. patent No. 6,201,474) in view of Geiszler et al. (U.S. patent No. 5,565,846)

Re claim 14, Brady et al. disclose a magnetic tape information storage media includes a cassette housing having integral RFID transponders and methods (Col.2 Line41-45) including IC having memory for storing information coupled to an antenna (Col.3 Line15-24). The RFID IC is mounted to a substrate and bonded to the coil antenna. (Col.6 Line1-4) The RFID IC and antenna leads are encapsulated. (Col.6 Line4-15)

However, Brady et al. fail to teach the coil is spaced from the substrate by a plurality of spacer elements extending between the substrate and the coil.

Geiszler et al. disclose the coil wound with approximately one quarter inch spacing between the windings of a secondary winding. (Col.5 Line47-67)

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Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the spaced winding coils as taught by Geiszler et al. into the teachings of Brady et al. in order to wind the coils with space between adjacent coils for preventing coils from interference among them.

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geiszler et al. (U.S. patent No. 5,565,846) in view of Vega et al. (U.S. patent No. 6,218,942).

Re claim 18, Geiszler et al. discloses that a receiver coil is disposed along the axis of the exciter coil at an opposite end of the exciter coil from the first receiver coil and is arranged substantially perpendicular to the exciter coil, and the two receiver coils are connected in parallel and in phase opposition. (Col.2 Line47-58) The indicated connection cancels out exciter interference and other unwanted signals. (Col.5 Line6-45)

However, Geiszler et al. fail to teach that the plurality of coils mounted in a three dimensional arrangement to provide a three dimensional reading field in which all transponders in the reading field may be interrogated.

Vega et al. disclose a hand holdable housing including an exciter antenna and a reader antenna to communicate a base station. The base station provides an excitation signal and receives a read signal. (Fig.1; Col.3 Line12-57)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ a housing including an exciter antenna and a reader antenna with a base station as taught by Vega et al. into the teachings of Geiszler et al. in order to the

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housing apply coils for the antennas to communicate with a base station device for better communication.

15. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geiszler et al. (U.S. patent No. 5,565,846) in view of Vega et al. (U.S. patent No. 6,218,942) as applied to claim 18 above, and further in view of Yamada et al. (U.S. patent No. 4,594,550).

Re claim 16, the teachings of Geiszler et al. in view of Vega et al. have been discussed above.

However, Geiszler et al. in view of Vega et al. fail to teach that each coil has turns with unequal spacing, so that the magnetic field developed by the coil is homogeneous.

Yamada et al. disclose a nuclear magnetic resonance (NMR) imaging of internal information of a target placed in a homogeneous static magnetic field produced by a group of differential scanner coils. (Fig.2; Col.3 Line20-60; Col.8 Line25-36)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ a homogeneous static magnetic field produced by a group of scanner coils as taught by Geiszler et al. in view of Vega et al. in order to apply a plurality of scanner coils into a magnetic field in a transponder antenna for providing constant component scanning.

16. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geiszler et al. (U.S. patent No. 5,565,846) in view of Vega et al. (U.S. patent No. 6,218,942) as applied to claim 18 above, and further in view of Brady et al. (U.S. patent No. 6,201,474).

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Re claim 19, the teachings of Geiszler et al. in view of Vega et al. have been discussed above.

However, Geiszler et al. in view of Vega et al. fail to teach that the coils defining the reading field are interrogated sequentially until all transponders are identified.

Brady et al. disclose a signal processing section in a RFID transponder comprises control and processing circuitry and memory providing functions such as response delay timing, data flow control and power supply switching. (Col.5 Line8-40)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the signal processing section in a RFID transponder as taught by Brady et al. into the teachings of Geiszler et al. in view of Vega et al. in order to provide the signal processing for the communication procedure that it would manage response time, flow control, and switching for better detection.

17. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geiszler et al. (U.S. patent No. 5,565,846) in view of Vega et al. (U.S. patent No. 6,218,942) as applied to claim 18 above, and further in view of Arai et al. (U.S. patent No. 6,184,693).

Re claim 20, the teachings of Geiszler et al. in view of Vega et al. have been discussed above.

However, Geiszler et al. in view of Vega et al. fail to teach coils being structured and arranged to reduce undesired electromagnetic noise from affecting the reading field.

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Arai et al. disclose coils constituting an electromagnetic noise sensor disposing as pairs and measuring electromagnetic noise level and direction of an electromagnetic noise source.

(Col.11 Line56-Col.12 Line33)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the electromagnetic noise sensor as taught by Arai et al. into the teachings of Geiszler et al. in view of Vega et al. in order to detect electric current flowing in an electronic circuit using a loop coil antenna for measuring electromagnetic noise level and source.

18. Claims 21 and 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Geiszler et al. (U.S. patent No. 5,565,846) in view of Vega et al. (U.S. patent No. 6,218,942) as applied to claim 18 above, and further in view of Geiszler et al. (U.S. patent No. 5,565,846).

Re claims 21 and 22, the teachings of Geiszler et al. in view of Vega et al. have been discussed above.

However, Geiszler et al. in view of Vega et al. fail to teach that the antenna has at least two coils with magnetic fields having 180° phase shift to minimize electromagnetic radiation and to limit of the reading area.

Geiszler et al. disclose the two receiver coils are connected electrically in parallel and are wound or connected so that they are 180° out of phase that the connection cancels out interference and unwanted signals from outside read range. (Col.5 Line15-45)

Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to employ the two receiver coils with 180° out of phase as taught by

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Geiszler et al. into the teachings of Geiszler et al. in view of Vega et al. in order to connect the two receiver coils in parallel and in phase opposition for effective cancels for interference and many other unwanted signals from out of the area.

Allowable Subject Matter

19. The following is a statement of reasons for the indication of allowable subject matter:

The distance between turns of coils increase when approaching the respective axis.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Buckens (U.S. patent No. 4,623,877) disclose method and apparatus for detecting targets of magnetic material and protected articles through an interrogation zone in which an alternating magnetic interrogation field is generated by transmitter antenna coils; Cresap et al. (U.S. patent No. 5,648,765) disclose a system and method for identifying items having an associated transponder that transmits an information encoded signal in response to a query signal and receives the information signals from at least some of the transponders.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Park whose telephone number is 571-272-2350. The examiner can normally be reached on 5:30am - 2:00pm (Monday - Friday).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John J Park
Examiner
Art Unit 2876

STEVEN S. PAIK
PRIMARY EXAMINER

